

MILESTONES

OUR FIRST
75 YEARS

THE SHEFFIELD

LADLE

SEPTEMBER 1963



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RCRA RECORDS CENTER

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The site of the present day Kansas City Works look like this in 1887 before construction started on the Kansas City Bolt & Nut Company. The train is traveling east on what is now Winner Road and is approaching the location of the present main truck gate.

James H. Sternbergh was a man of vision. He believed that our nation had a great destiny . . . and he gambled what he had on that belief.

He had watched the westward movement, and yearned to be a part of it. He knew that when the railroads went west, people would go with them. And where people went, there must be houses and schools and churches and factories and places of business.

In 1888, he started a small bolt and nut company in the valley of the Blue east of

OUR FIRST

Kansas City, Missouri . . . and in so doing, established a monument which lives yet today. He breathed life into a small plot of land and a few buildings . . . and it grew and prospered, creating more life as time wore on.

Today, the vision of James H. Sternbergh has become larger than he probably ever dreamed possible. It embraces complex machinery and steelmaking processes . . . and includes thousands of people throughout the length and breadth of our land.

He provided the beginning for what is now the Sheffield Division of Armco Steel Corporation . . . and it has become a vital and thriving industrial community of which he would be proud, were he with us today.

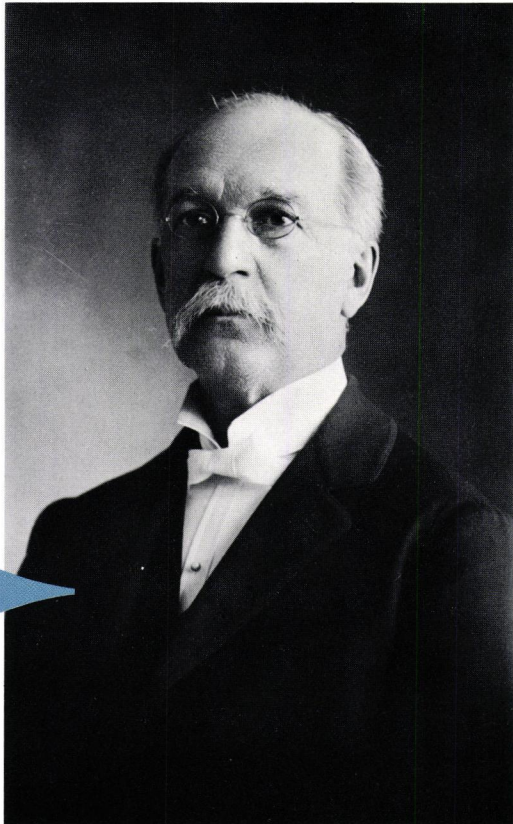
This, then, is his story . . . and the story of what has happened through the first seventy-five years.

In 1888 The Kansas City Bolt & Nut Company started on only 15 acres. Today, the sprawling Sheffield Division of Kansas City Works extends from Twelfth Street to the Missouri River (background), and also includes the Union Wire Rope plant located at 21st and Manchester Avenues. Total area of Union Wire Rope and the Kansas City Works by 1963 was approximately 990 acres. Its furnaces produce many grades of steel for the automotive, construction, mining and petroleum industries, as well as steel for fabricators and products used in homes and far



SEVENTY-FIVE YEARS





J. H. Sternbergh

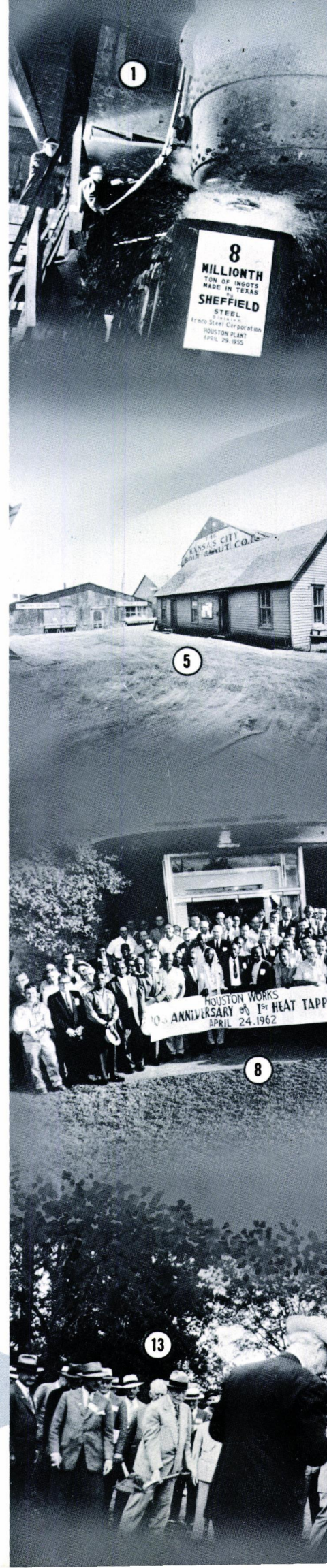
Founder of The Kansas City Bolt & Nut Company

James Hervey Sternbergh was born on May 20, 1834, at Henrietta, Monroe County, New York, and though he has been deceased for more than fifty years, is recognized as one of the important pioneers in the bolt and nut industry. He invented and patented many machines which contributed greatly to the growth of the industry.

Two of Mr. Sternbergh's most important inventions came in 1867, two years after he had established a bolt and nut business in Reading, Pennsylvania. One was a machine for pressing hot nuts . . . the other was a surface grinding machine used to grind dies for the nut machine. These two inventions enabled him to manufacture hot pressed nuts with greater economy. Later, he perfected the first machine to successfully cold roll threads on bolts.

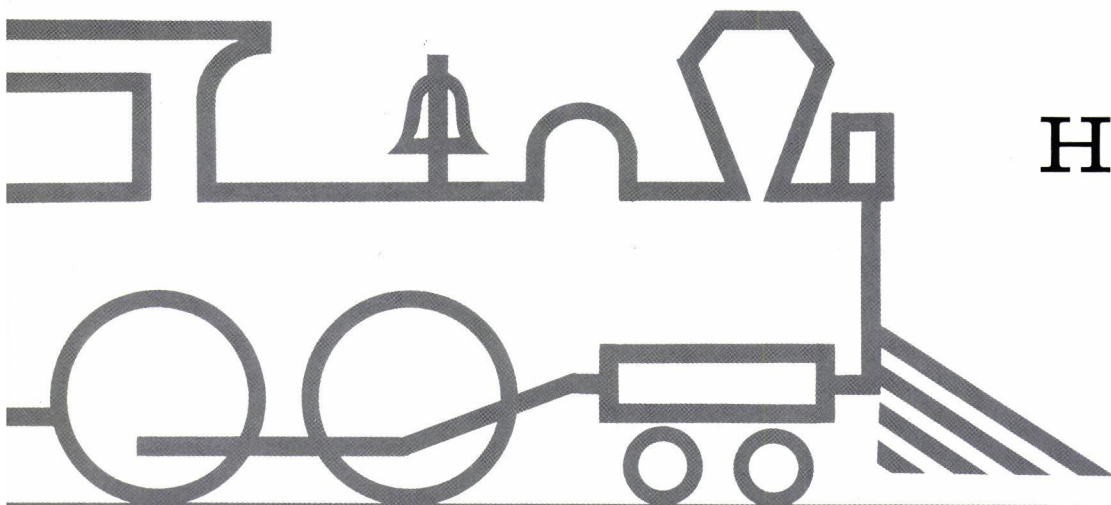
In 1888, Mr. Sternbergh expanded westward to capitalize on the growth of the nation's railroads in that direction. His small bolt and nut plant, then called The Kansas City Bolt and Nut Company, was the beginning of what is now the Sheffield Division, Armco Steel Corporation.

**MILESTONES
of Our 75 Years**





1. Teeming the 8 millionth ton of ingots at Houston.
2. First steam engine at Kansas City.
3. The jumbo shear about 1916.
4. Threading bolts about 1916.
5. Superintendent's office and company restaurant.
6. A picnic in 1922.
7. Shearing scrap plate.
8. Houston's 20th Anniversary celebration.
9. Dedicating the new blast furnace in Houston, 1944.
10. The main office of The Kansas City Bolt & Nut Company about 1923.
11. Flood waters of Hurricane Carla strike Union Wire Rope.
12. Tulsa Rolling Mills Co., now Sand Springs Works.
13. Turning the first dirt for the Houston Works.
14. Lighting the Houston coke ovens.
15. The Kansas City Wire Mill in 1929.
16. Hand stranding, a vanishing art.



Helping Build the Nation's Railroads

■ The beginning of what is now the Sheffield Division, Armco Steel Corporation, dates back 75 years. The original company was incorporated in April of 1888 as The Kansas City Bolt and Nut Company. The plant site included 15 acres and when the first bolt and nut products were forged on May 9, 1888, less than 100 men were on the payroll.

The venture was a pioneering step. Manufacturing plants of this type were common in the east where they were close to their sources of raw materials, but establishing a plant in the west, far removed from iron ore, coal or a supply of wrought iron bars, seemed to be a bold and rather questionable undertaking.

Despite the doubts which were raised by some of his friends and associates, James H. Sternbergh was convinced that a plant was needed "in the west" which could better supply the rapidly expanding railroads. His bolt and nut works in Reading, Pennsylvania, which he had successfully managed for nearly 25 years, was too far away to properly serve this westward expansion. He firmly believed that a plant in Kansas City could get a large portion of this railroad business—especially since he had developed and patented a special track bolt, and could easily tool up to make other products connected with railroad construction.

The westward movement of the railroads in the 1800's placed them farther and farther from eastern iron suppliers. To help supply the needs of these railroads, J. H. Sternbergh, an eastern iron manufacturer, surveyed the

As it turned out, Mr. Sternbergh was right. The railroads became major customers of his small bolt and nut plant. They not only bought the newly developed track bolts in large quantities, but many other iron products as well. Those early products included machine bolts, square and hex nuts, washers and wrought iron forgings of many types.

Mr. Sternbergh continued to live in Reading, but appointed Mr. I. C. Howes to look after his interests and manage the Kansas City plant.

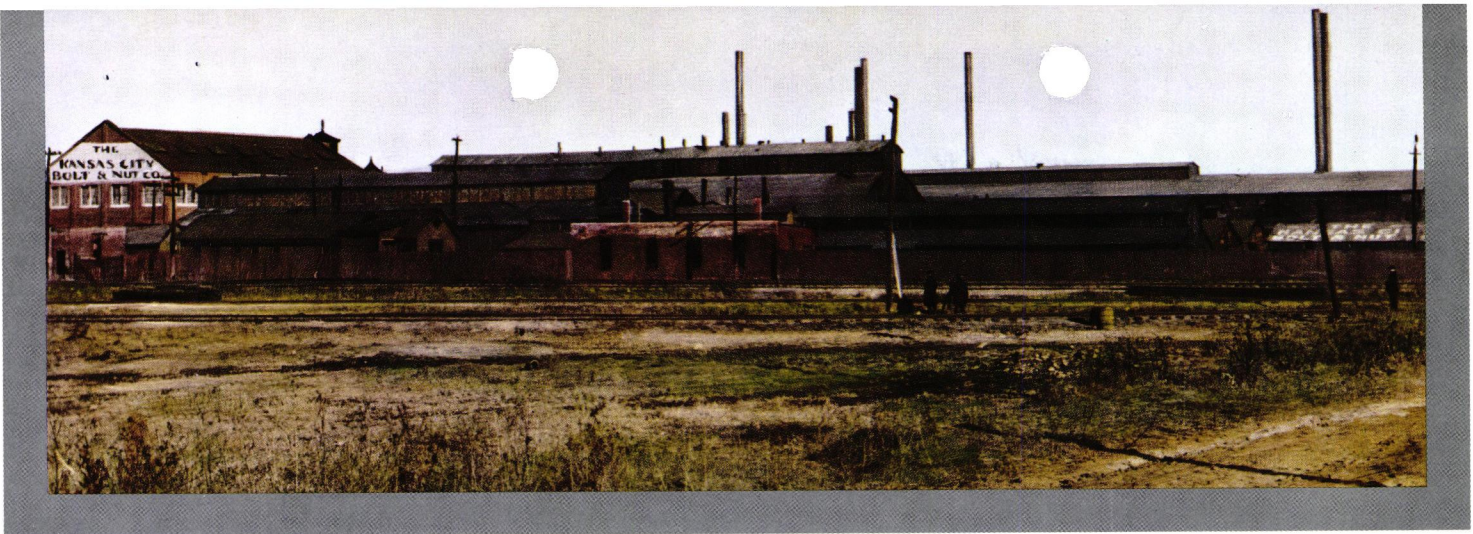
In the beginning, the plant had no facilities with which to manufacture iron bars, so it was necessary to purchase this basic material from other mills. With the installation of the 10-inch Mill in 1895, the plant gained this capability. As many will remember, this first process was called "pile on board".

During the early years the plant enjoyed a steady business growth and by 1907, sales had passed one million dollars per year.

In 1911, however, the company suffered a setback. A fire started in the shipping and storage areas and caused extensive damage. The cost was estimated at \$35,000.00. Many old-timers remember the smoke and red glow in the eastern sky over Kansas City caused by the fire.

west with the idea of establishing a bolt and nut works. Kansas City, with its favorable location in relation to railroads, was selected. The company was incorporated under the name of The Kansas City Bolt & Nut Company.





This is one of the earliest known plant photographs. It was taken some time prior to 1915. Independence Avenue is in the foreground, and the

present machine shop is housed in the building to the far left. The brick building in the center of the picture is the old testing laboratory.

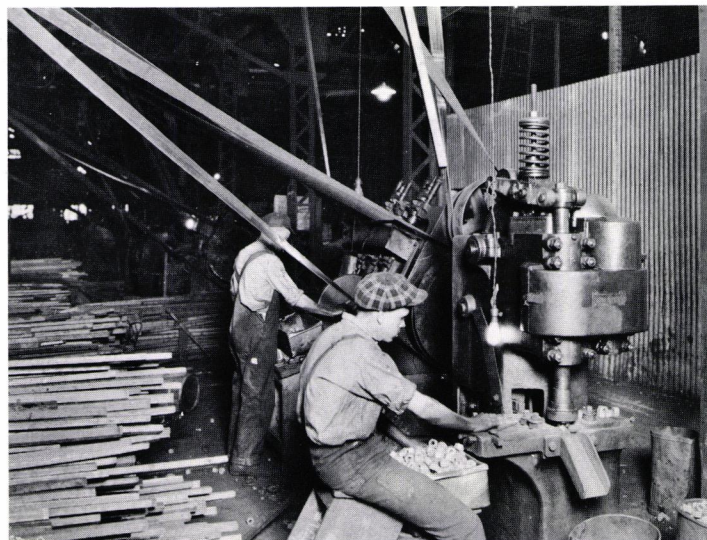
In March of 1913, James H. Sternbergh passed away. Since he controlled the major interest in the company, his wife, Mrs. M. D. Sternbergh, succeeded as president.

For some time prior to Mr. Sternbergh's death, the local management had expressed the opinion that the sales position of the company would be strengthened if the ownership was in the hands of westerners. In 1915, after much investigation and negotiation, a group of four local men purchased the company. They were George T. Cook, A. L. Gustin, E. A. Nixon and Solomon Stoddard.

During the First World War, demand for the company's products greatly accelerated. The increased acceptance of steel by many former iron customers, however, cast a shadow of doubt upon the future of the company's iron operation. From a 1917 stockholders' meeting came the warning that the end of the war might well bring the end of the company. Realizing that the day of iron was over in many fields, and not wanting to find itself in the same position as the buggy makers when the horseless carriage was invented, the local management decided that it would have to enter the steel business within not too many years, or go out of business entirely.

The decision was made in favor of steel.

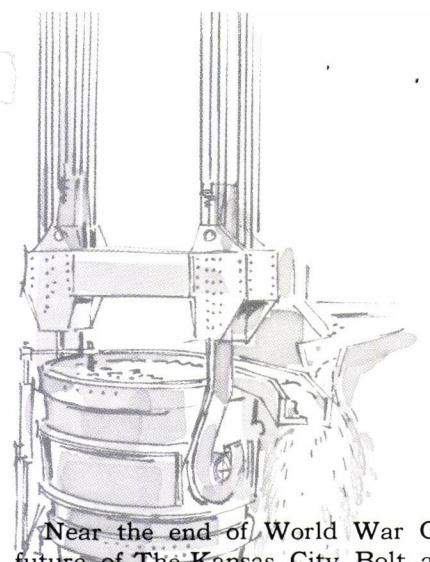
This photograph, taken sometime prior to 1917, shows the burring of iron nuts. Some of these same burring machines, with open belt transmissions, are still in operation at Sheffield's Kansas City Works.



In 1895, when the first 10-inch Mill was installed, a method of preparing raw material called "pile on board" was used. Strips of iron were bent to form a box (above). The box was placed on its side on top of a wooden board. Small pieces of iron were piled inside. The fagot pile was heated to the fusing point and rolled in the mill. The use of this process declined after 1920, when two open hearth furnaces were installed. The last fagot piles were used about 1924.

Before The Kansas City Bolt & Nut Company had steam engines or diesel locomotives, the power for moving materials around the plant was furnished mainly by mules. This mule is pulling a load of fagot piles.





Near the end of World War One, the future of The Kansas City Bolt and Nut Company seemed very questionable. Iron products were losing out to those made of steel. Consideration was given to liquidating the business. The only alternative was to enter the steel business . . . and this required time, know-how and money. Not enough of any of these three ingredients seemed available.

Still, those in control hated to give up the fine relationships which had been established with many customers . . . and then there were 650 employees to think of also. Many had never worked elsewhere. A study was ordered of the possibility of entering the steel business.

One of the major problems seemed to be the lack of iron ore and pig iron in the

Changing from **IRON** to **STEEL**

immediate area. This problem was not a new one . . . the very same situation had been faced, in fact, when the company was founded. The solution had been to use scrap iron, which was readily available in the immediate area. It was unknown, however, if this same solution could be applied to making steel.

During this period, Mr. Lewis L. Middleton, a man with steel manufacturing experience, was added to the organization. Mr. Middleton was given the job of making a detailed study of the possibility of producing steel from scrap iron.

He set out on exploratory trips around the country to see if any other company was making steel with an all scrap charge. After an unproductive search through the eastern mills, Mr. Middleton came upon an old converted copper smelter in Midvale, Utah, where steel was being made from 10 per cent cast iron and 90 per cent steel scrap. Overjoyed with this discovery, Mr. Middleton hurried back to Kansas City.

The events which followed, particularly the discovery that cast iron could be substituted for pig iron, not only saved the

company from almost certain liquidation, but provided the impetus needed at that time for future growth and expansion.

It was a happy night indeed, on October 31, 1920, when Sheffield successfully produced its first heat of steel from a 100 per cent scrap charge.

At first, steel producers questioned the reliability of making steel from scrap. But when fully controlled and accredited tests showed that scrap metal retained the same qualities when melted down as it had when first refined, other producers began to use the same process. Soon, the practice of using a cold scrap charge to some degree became commonplace . . . and today, practically every steel producer in the country includes scrap in their open hearth charges.

Sheffield was the pioneer in this 100 per cent scrap charge adaptation.

The years from 1919 to 1923 were bad ones for Sheffield. Already burdened with the expense of converting from the iron business to the steel business, additional difficulties were encountered because of the depression of 1921.

During this time, a group of men, experienced in the steel business, came to Kansas City from East St. Louis. They were searching for a site to build a plant for rerolling scrap rails into reinforcing bars. One of these four men, Mr. W. L. Allen, knew some of the officials of the Kansas City Bolt and Nut Company and asked if he could meet with them.

Takes Over Management

The officials of the Kansas City concern were very impressed with the progressive ideas of the group, and after further investigation, the Board of Directors of the Kansas City Bolt and Nut Company decided that the group should take over the management of the company. An agreement to this effect was reached on February 1, 1923.

The four St. Louis men were: Mr. Allen, R. L. Gray, H. W. Gronemeyer and J. C. Shepherd. All eventually held high posts with the company . . . and Mr. Gray later became president of Sheffield Steel Corporation, president of Armco Steel Corporation, and finally, Chairman of the Board of Directors, Armco Steel Corporation.

In the latter part of 1924, the organization made one of its first changes in manufacturing equipment. This was the beginning of a long succession of improvements which were to follow during the 1920's. The old 16-inch Mill, which had been built in 1897, was adapted to the production of

(Continued on following page)



The first heat of steel made by The Kansas City Bolt & Nut Company was tapped from one of two 50-ton open hearth furnaces completed in 1920. Five years later a third furnace of the same size was completed. Then in 1928, all three were converted to 100-ton capacity. The following year a fourth 100-ton open hearth furnace was added. On hand for the charging of this fourth furnace were (l to r, foreground) T. T. Scott, W. L. Allen, F. C. Herbster and F. Ray McFarland.

The addition of electric furnaces has greatly broadened Sheffield's steelmaking capacity. Since the Division's first electric furnace was tapped at Houston in 1951, Sheffield has added others at Kansas City and Sand Springs. At this time, Houston has two, Kansas City three and Sand Springs one. In addition to these six electric furnaces, the Sheffield Division has eight open hearth furnaces at Houston and four open hearth furnaces at Kansas City.



IRON to STEEL *(Continued)*

rail steel reinforcing bars. The adaptation included slitting the rails into three sections . . . the head, web and flange . . . and then rolling bars directly from these sections without remelting. This process turned out to be highly successful, and rail reinforcing bars were added to the company's product line.

For years, Kansas City had been one of the country's largest steel tank producing centers. Since there were no local steel manufacturers, the Kansas City tank makers were bringing in flat rolled steel from the St. Louis, Chicago and Pittsburgh areas. After careful consideration of this, the Kansas City Bolt and Nut Company decided to install a Sheet Mill with the hope of capturing a portion of this business. This mill was completed in 1925.

Corporate Name Changed

By this time, the corporate name, The Kansas City Bolt and Nut Company, seemed a bit inappropriate. It was true that bolts and nuts were very important products at the time, but by no means did they represent the greatest volume of business. The company was now manufacturing steel ingots, billets, merchant bars, reinforcing bars, sheets and plates, as well as the bolt and nut products.

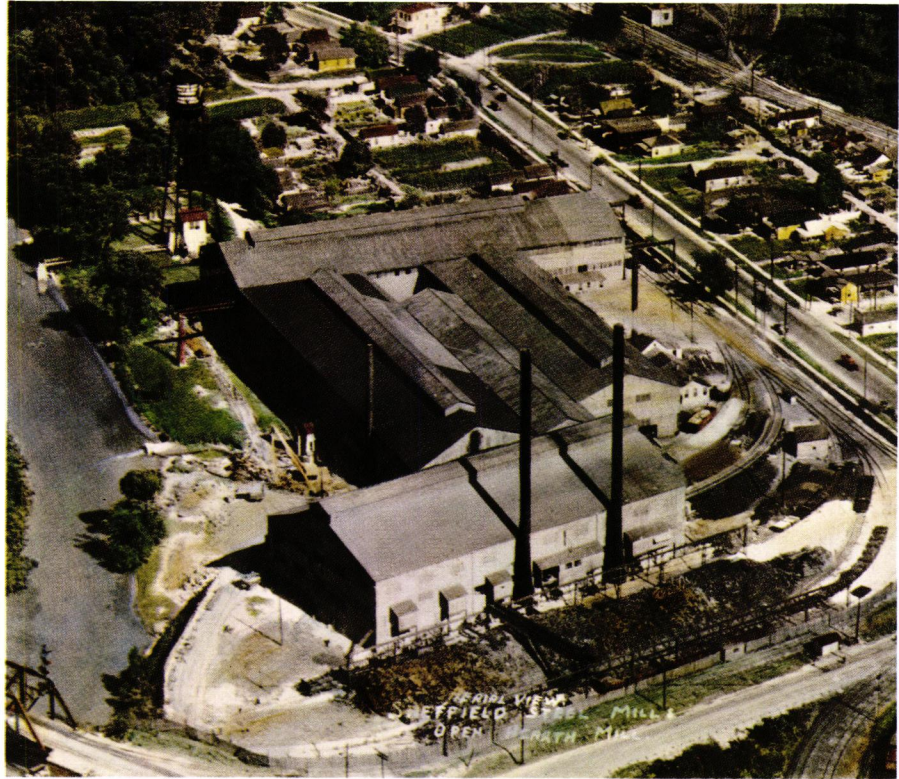
So, on October 13, 1925, the Board of Directors changed the corporate name to Sheffield Steel Corporation, adopting the name of the community which surrounded the plant.

Through the years, the company continued to look for new industries to serve and new products to make. Surveys proved that Sheffield was not meeting the farmers' requirements for fencing, barbed wire and bale ties . . . items in large demand. As a result of these findings, it was decided to build a Wire Mill. This was completed in 1928.

The addition of the Wire Mill necessitated increased steelmaking capacity, so late in 1928, the three existing 50-ton open hearth furnaces were rebuilt, and their capacities increased to 100 tons. During the following year, a fourth 100-ton open hearth furnace was completed.

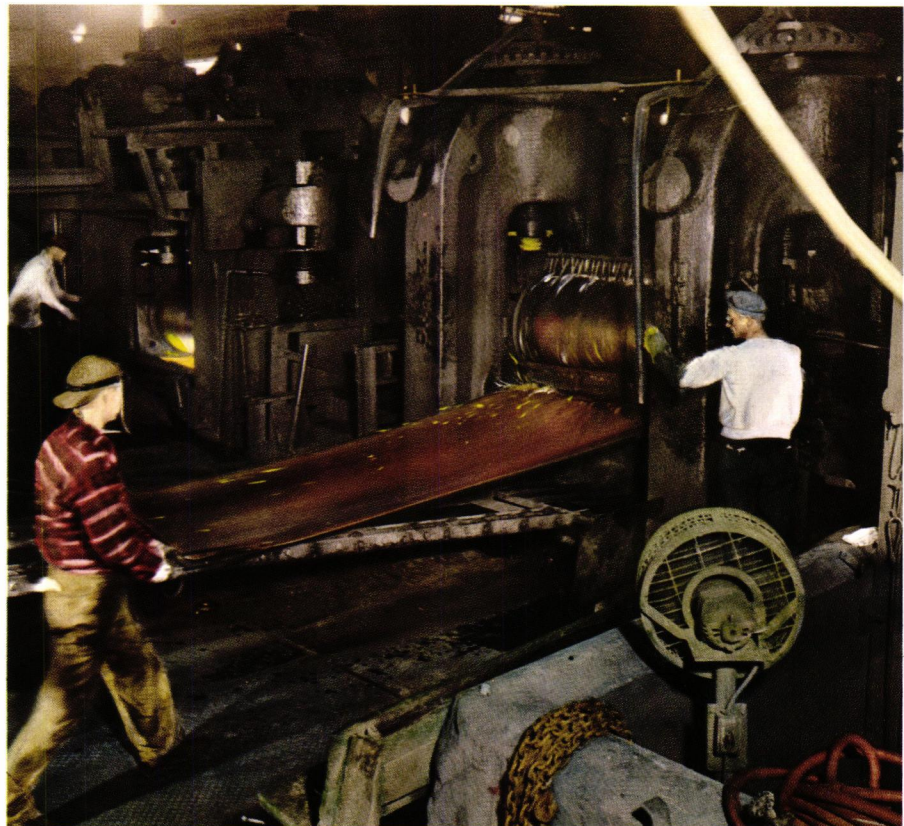
During the same approximate time, work was begun on a Billet Mill, as well as a modern Rod and Bar Mill. All of these facilities were put into operation in 1929, greatly increasing Sheffield's product line and attracting new customers.

Sheffield's management soon began to look elsewhere for new manufacturing plants.



The smokestacks of two open hearth furnaces cast easterly shadows toward the north plant of The Kansas City Bolt & Nut Company. On Halloween night, 1920, the first steel ever made by the small bolt and nut company was tapped. It represented a pioneering event, for the steel was made from a 100 per cent scrap charge. This photograph was taken about 1921.

On April 1, 1925 The Kansas City Bolt & Nut Company began operating its new Sheet Mill. It was hand operated, and continued in use until 1948. The rolls were set by the lever at the right of the stand. The sheet roller's job was a real art, and was usually handed down from father to son. There were few controls to help arrive at the proper thickness of the sheet.



Seventy-Five Years of Leadership

JAMES H. STERNBERGH was Founder and first President of The Kansas City Bolt & Nut Company. Mr. Sternbergh served as President from the time of the Company's beginning in 1888 until his death in 1913. He was a prominent figure in the iron and steel industry. In 1865, he established the J. H. Sternbergh Works at Reading, Pennsylvania.

MRS. MARY D. STERNBERGH, the wife of J. H. Sternbergh, was the only woman President of The Kansas City Bolt & Nut Company. When her husband died in 1913, Mrs. Sternbergh succeeded him. She served in that capacity until 1915. During this time, she resided in Reading, and never took an active role as President. In 1915, the Company was purchased by four men from the Kansas City area.

GEORGE T. COOK was President of The Kansas City Bolt & Nut Company from 1916 to 1920. Mr. Cook was one of four men who purchased the Company from the Sternbergh interests in 1915. He had been with the Company 16 years before becoming President.

SOLOMON STODDARD was President of The Kansas City Bolt & Nut Company from 1920 to 1923. Mr. Stoddard left a railroad job about 1900 to become Manager of the company. He later became General Manager and Vice-President. He was one of four men who purchased the Company in 1915.

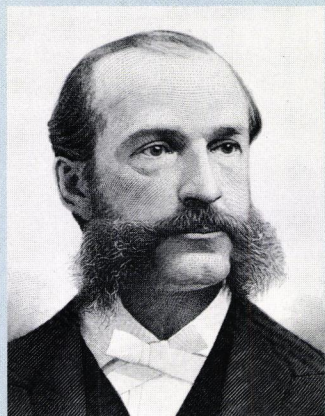
WILLIAM L. ALLEN was President of The Kansas City Bolt & Nut Company and Sheffield Steel Corporation successively from 1923 to 1930. The corporate name was changed from The Kansas City Bolt & Nut Company to Sheffield Steel Corporation on October 13, 1925. During Mr. Allen's term as President, in May of 1930, Sheffield Steel Corporation became a wholly owned subsidiary of Armco Steel Corporation.

RALPH L. GRAY was President of Sheffield Steel from 1930 until 1954. During Mr. Gray's presidency, Sheffield became a Division of Armco (June 30, 1954). Shortly thereafter, in October, 1954, Mr. Gray was elected Executive Vice-President of Armco Steel Corporation and moved to Middletown, Ohio. In 1956, he was elected President of Armco Steel Corporation, and in 1959 Mr. Gray was elected Chairman of the Board of Directors.

JOHN W. ANDERSON was President of Sheffield Steel, Division of Armco Steel Corporation, from 1954 to 1956. Mr. Anderson joined The Kansas City Bolt & Nut Company in 1919 as a salesman. He held a number of sales posts prior to being named President in 1954.

LOYAL H. JUENGLING was elected Vice-President, Armco Steel Corporation, and placed in charge of operations of the Sheffield Division in 1956. Mr. Juengling held that post until he was transferred to Armco's headquarters in 1958 and placed in charge of purchasing and traffic.

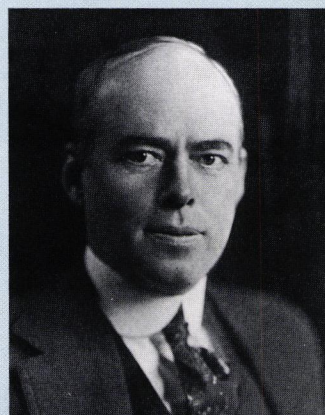
ROBERT F. KUHNLEIN, on August 1, 1958, succeeded Mr. Juengling as Vice-President of Armco, in charge of the Sheffield Division. In January of 1960, Mr. Kuhnlein was appointed Vice-President and General Manager of the Sheffield Division, a position he still holds at the present time.



James H. Sternbergh



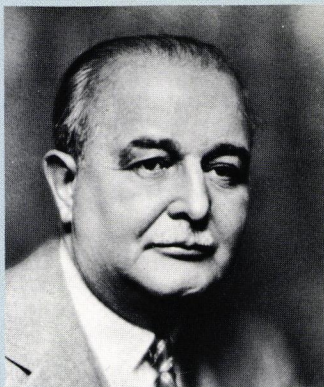
Mrs. Mary D. Sternbergh



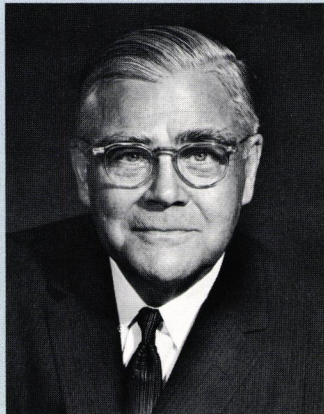
George T. Cook



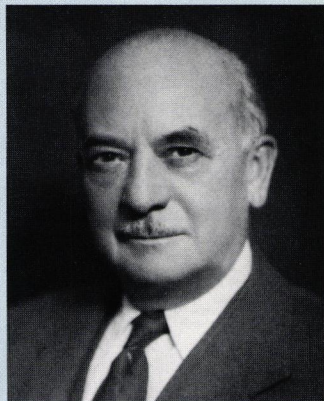
Solomon Stoddard



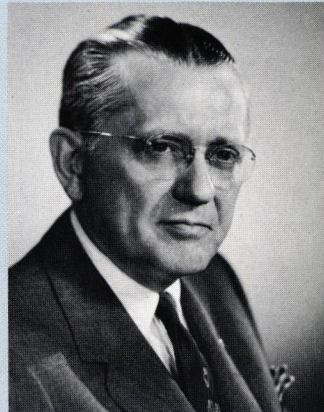
William L. Allen



Ralph L. Gray



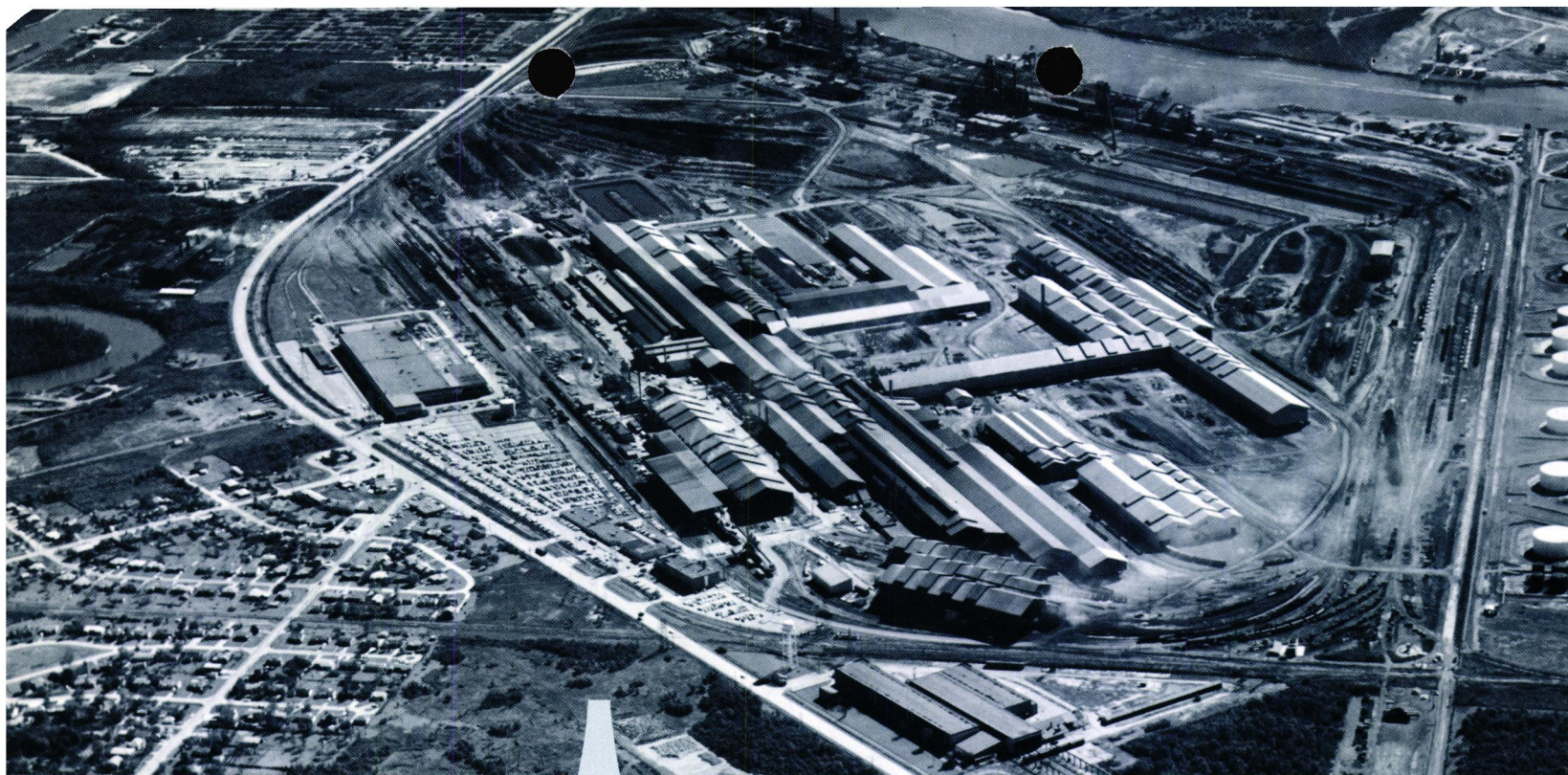
John W. Anderson



Loyal H. Juengling



Robert F. Kuhnlein



On May 27, 1941 the Armco silver spade dipped into Texas soil in the hands of Armco Steel Corporation founder George M. Verity, to

mark the official ground breaking of the Houston plant. Since that time the Sheffield Division plant has grown into a major steel producer.

Acquisitions Through the Years

Early in 1930, officials of Sheffield Steel Corporation visited Middletown, Ohio, to determine if certain contemplated operational changes in rolling blue annealed sheets would infringe on Armco patents.

Out of these discussions came the realization that the two companies had a rather unique community of interest which might warrant the merger of the two firms. Subsequent discussions and negotiations resulted in Sheffield becoming a wholly owned subsidiary of Armco Steel Corporation in May of that year.

In 1933, Sheffield leased part of the Scullin Steel Mills at St. Louis for the purpose of manufacturing merchant bars and structurals, and for transferring the manufacture

of tie plates from the Kansas City plant to St. Louis. This agreement was concluded late in 1945, though many of the St. Louis employees elected to stay with Sheffield and moved to other locations.

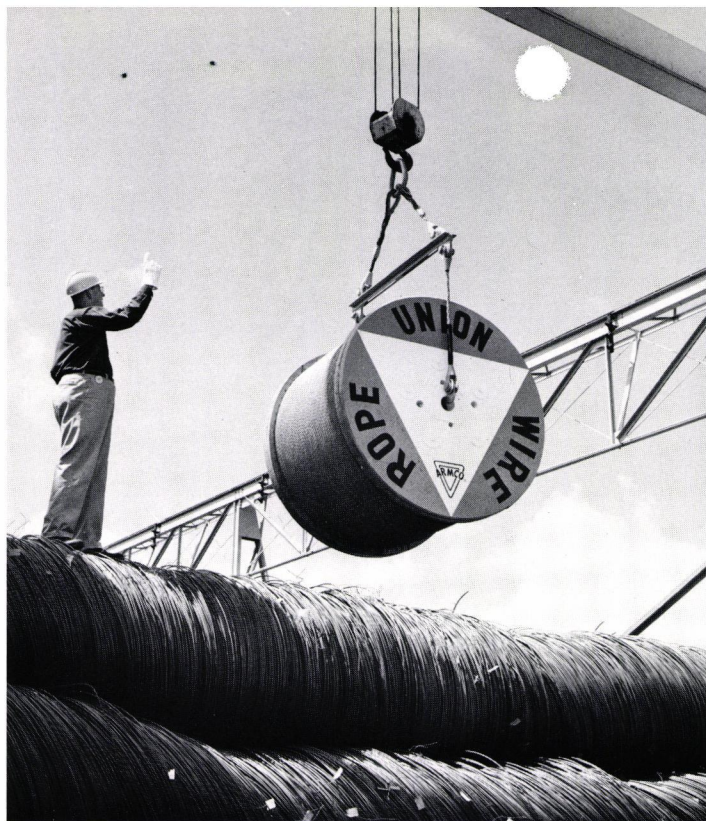
In 1936, Sheffield leased a small steel mill, called the Tulsa Rolling Mills, at Sand Springs, Oklahoma, from the Sand Springs Home interests. The facilities included a 75-ton open hearth, a 24-inch Billet Mill, a 16-inch three-high Roughing Mill and a hand-operated 10-inch Mill. Production was confined exclusively to reinforcing bars.

Ten years later, in 1946, the Sand Springs plant was purchased outright by Sheffield, and extensive improvements have been added to the facilities since that time.

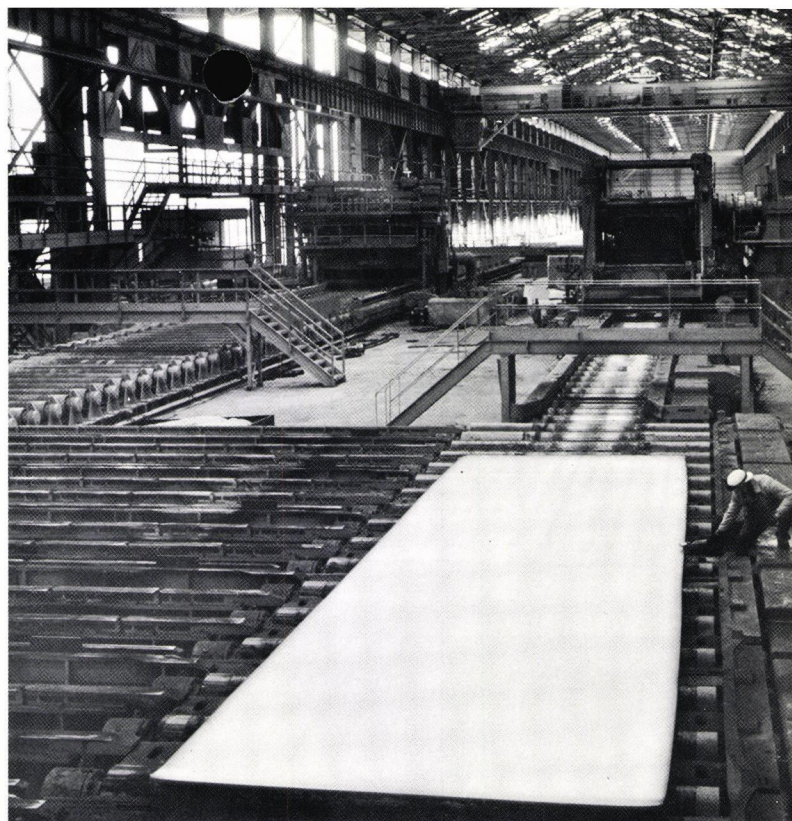
1936 also marked the year that intensive studies were made into the feasibility of expanding into the Gulf Coast area. These studies were submitted to and agreed upon by Armco and in March of 1941, the first construction work began at the Houston plant. Few of those present for the official ground breaking ceremony, on May 27, 1941, had much cause to suspect that the Houston plant was destined to play a very important part in a major war effort which was to begin a bare half year later.

The original plans for the Houston plant were somewhat similar in scope to those of Kansas City. A rather modest installation was planned, calling for three open hearths, a Structural Mill, Merchant Mill, Rod Mill and Plate Mill. However, even before the first buildings were completed or the first heat of steel made, Pearl Harbor and the ensuing Second World War brought about a sudden change in those plans.

In April of 1942, Sheffield entered into a contract with Defense Plant Corporation, representing the U. S. Government, to build additional steelmaking and plate rolling facilities, thus nearly doubling the originally planned melting and rolling facilities. The additional units, created because of the urgent war situation, included a blast furnace, a battery of 47 coke ovens, a by-products plant, two



Tendons of steel made at Union Wire Rope have made it possible for all types of industry to lift, pull, move or secure tremendous loads.



A giant 160" Combination Slab and Plate Mill was recently installed at the Houston Works. It is the only mill of its kind in the U.S.

more open hearth furnaces, a hot top building, a complete blooming mill, coal mines in Oklahoma, iron ore property in East Texas, and sundry other smaller items. Following the end of the Second World War, all of these facilities were eventually purchased from the U. S. Government.

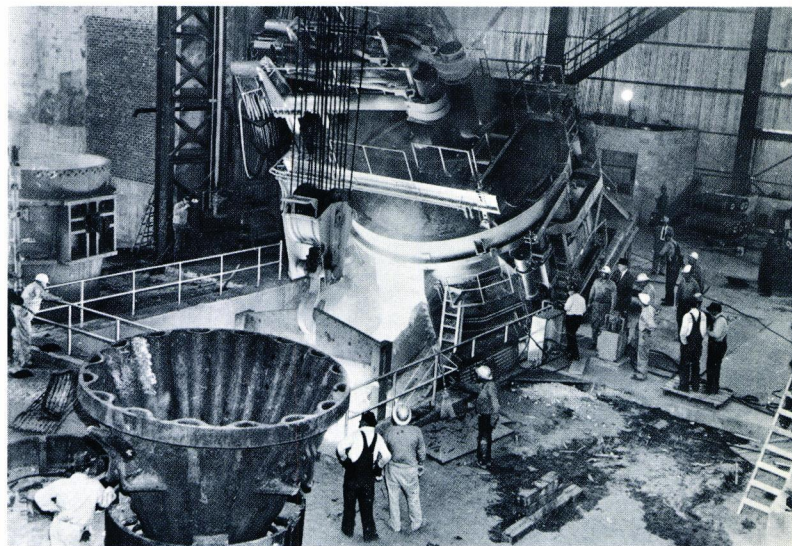
Since that period, the Houston Works has been greatly expanded. It now has an annual capacity of more than one million tons of ingots, as well as a completely modern complex of rolling facilities for the production of many common and specialized grades, types and shapes of carbon and alloy steels.

Two other additions to the Sheffield Division have come about through Armco purchases. In 1954, Southwest Steel Products was purchased in Houston, Texas, and this firm has undergone many changes in its production facilities and product line since that time.

In 1958, Armco purchased the Union Wire Rope Corporation, and several years later it became part of the Sheffield Division. With the acquisition of this company, Sheffield obtained a modern industrial plant, situated approximately one mile south of the main Kansas City plant, as well as many warehouses in major cities throughout the country. The Union Wire Rope product line has greatly expanded the Armco array of steel products, and added the skills and talents of nearly 800 employees to the Sheffield Division.

Today, in 1963, the Sheffield Division includes three steel producing plants—Kansas City, Houston and Sand Springs—as well as iron ore mines in East Texas, coal mines in Oklahoma, a bar fabrication and open web steel joist plant in Houston, Texas, sales offices in many major cities of the country, wire and wire rope facilities at Union Wire Rope and numerous Union Wire Rope warehouses in many parts of the country.

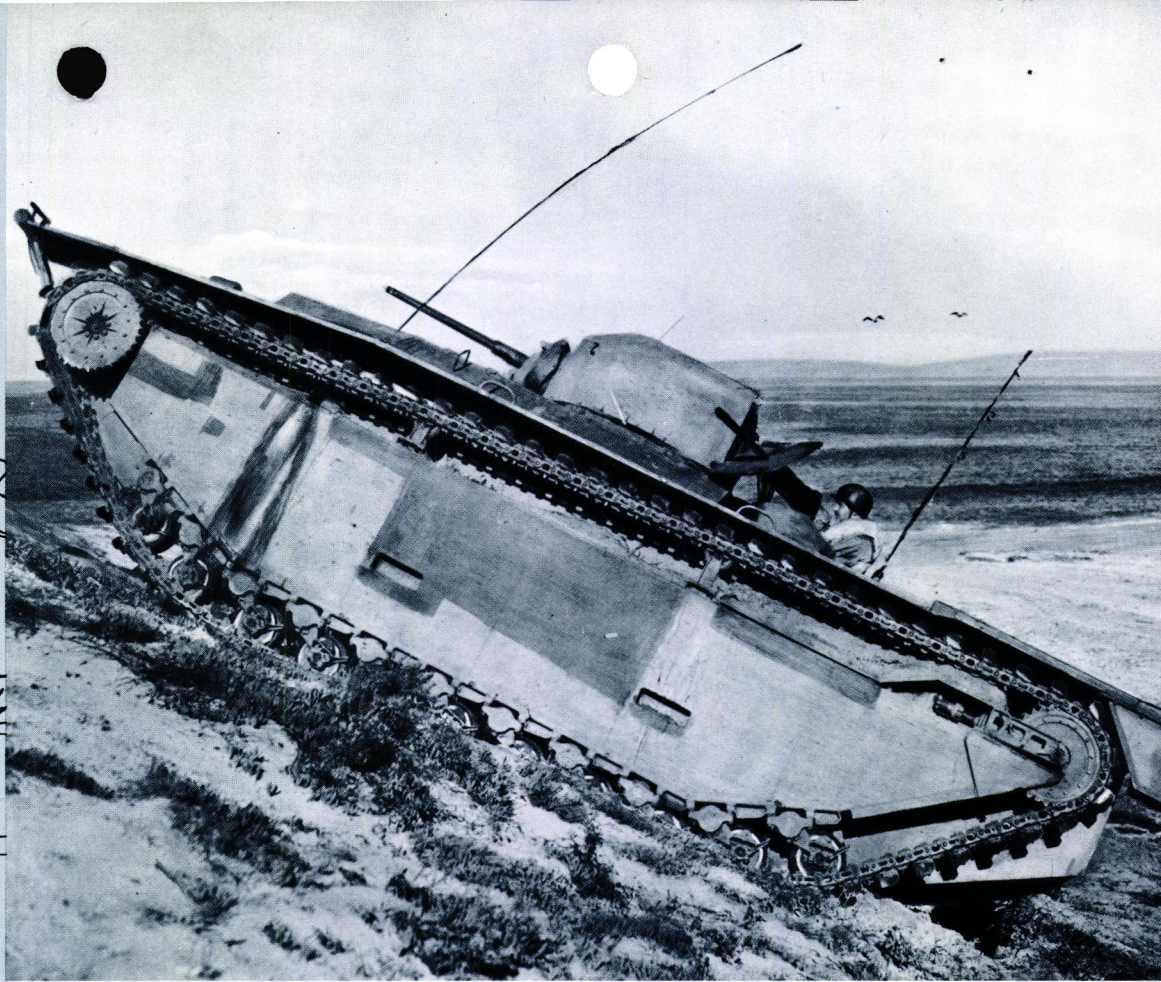
All of this evolved from a small bolt and nut plant started 75 years ago by James H. Sternbergh of Reading, Pennsylvania.



When the Sheffield Steel Corporation leased a small steel mill at Sand Springs, Oklahoma in 1936, the plant had one 75-ton open hearth furnace. This furnace has since been removed, and an electric furnace of 90-ton capacity was installed in its place.

Waving from their office building in Houston, Texas, these Southwest Steel Products employees say hello to Sheffield Division people. This steel fabrication firm, which became a subsidiary of Armco in 1954, was added to the Sheffield Division in 1960.

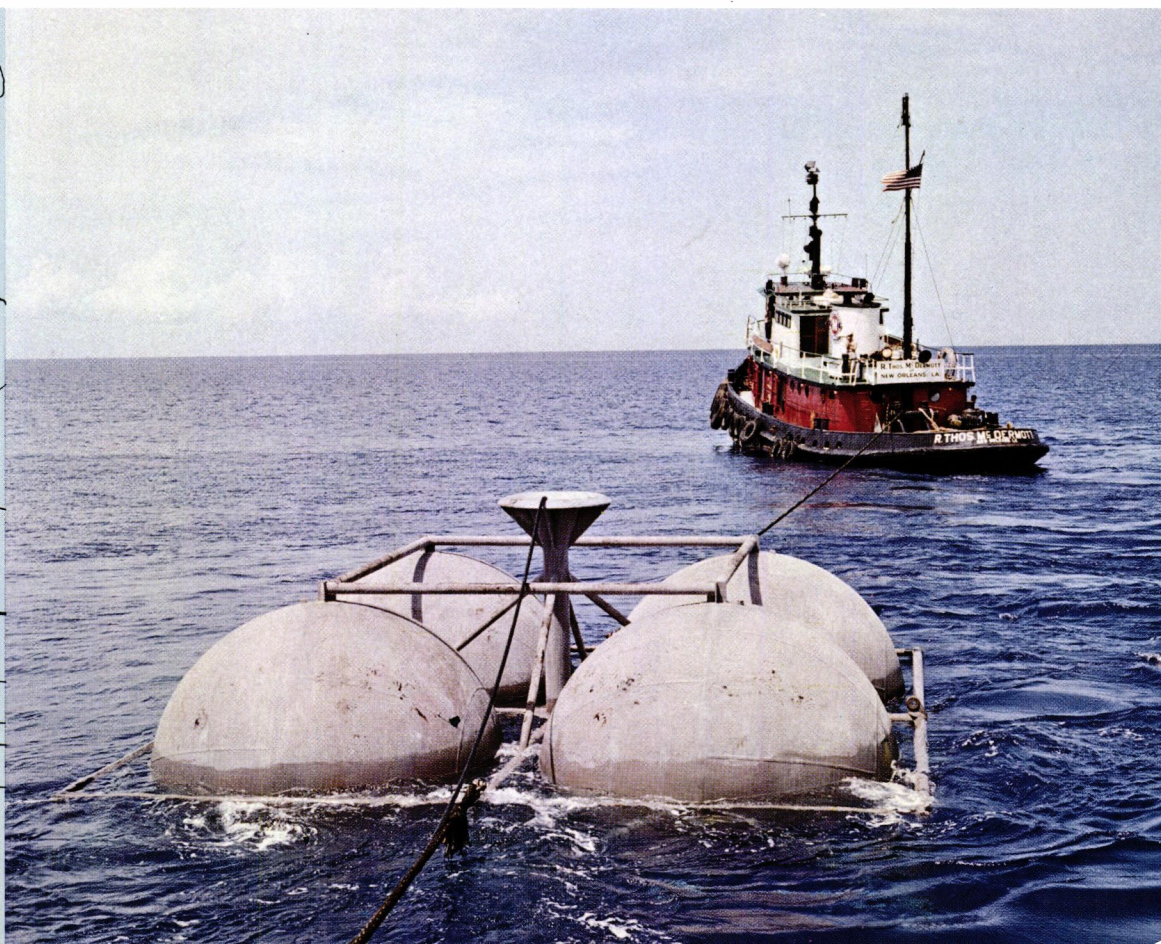
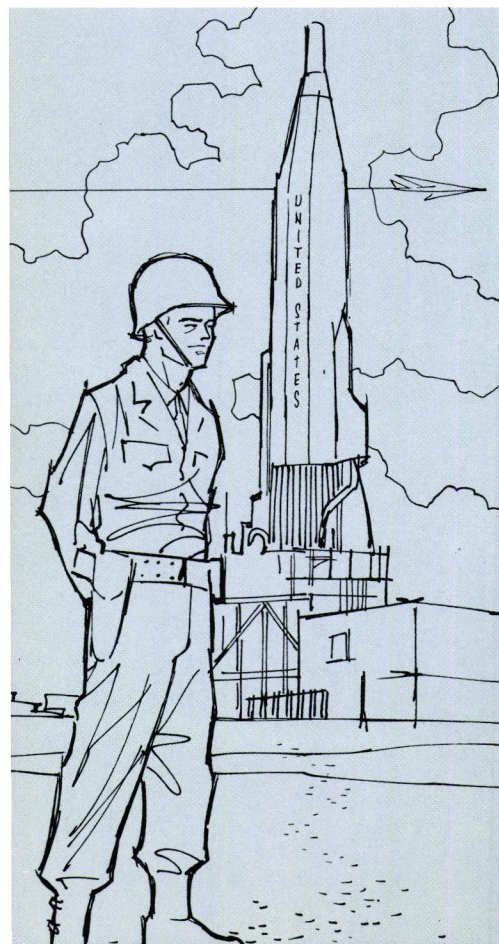




During the Second World War, the plants of Sheffield Steel Corporation produced nearly two million tons of steel for use in the war effort. Included were large tonnages used to make landing craft and armor piercing projectiles.

We Helped Win a War...and Help

Somewhere off the Bahama Islands, a tugboat moves out to sea with an important cargo. These buoys are part of a sensitive electronic underwater station used for submarine detection and communication. Suspended below the sea's surface at depths determined by the U. S. Navy, these buoys lie listening, day and night, for signals from submarines; and stand ready to relay these signals on. The buoys are made from SSS-100A alloy steel, which was produced at the Houston Works.



Steel has been used by mankind in millions of ways . . . and fortunately, most of these uses have been for the advancement of peoples' comfort or convenience.

Steel is used to help plant and harvest and process most of the food we eat. It helps weave the cloth from which our clothes are made. It helps furnish protection and comfort from the elements. And it forms the basic material from which most of our industrial machinery and factories are built.

In short, steel has become so vital and necessary to mankind today that it would be nearly impossible to carry on without it.

Unfortunately, steel is also used by mankind as a destructive material. Ships, planes, tanks, missiles, guns and bullets all require steel in some form. And, while Sheffield was originally conceived as a peacetime industry, it has responded on several occasions when the forces of aggression challenged our nation.

Many products made of iron were used by our country during the First World War, and The Kansas City Bolt and Nut Company supplied what it could to help win that war.

During World War II, Sheffield's four plants, Kansas City, Houston, St. Louis and Sand Springs, produced more than two million tons of steel . . . and almost all of this was used in some

Keep the Peace . . .

manner in the war effort. Time and again, Uncle Sam called upon Sheffield for special steel to be used in some special way, and in the same fashion which has characterized Sheffield people down through the years, each challenge was met successfully and well on schedule.

Steel for shipbuilding . . . steel for 155 mm. shells . . . steel for rifle ammunition . . . steel for armor piercing shot . . . steel for army cots and barracks . . . reinforcing bars for airstrips and other types of military installations—all these, and many more, uses were found for the steel made by Sheffield men and women during war time. When peace finally came, and the boys started coming home, Sheffield people could hold their heads high, for they had helped make the victory possible.

Today, Sheffield's furnaces pour out their molten metal day and night . . . and while some of the steel produced does go into defense installations and various implements of war, most of it eventually winds up in products used by people and industry for the betterment of mankind.

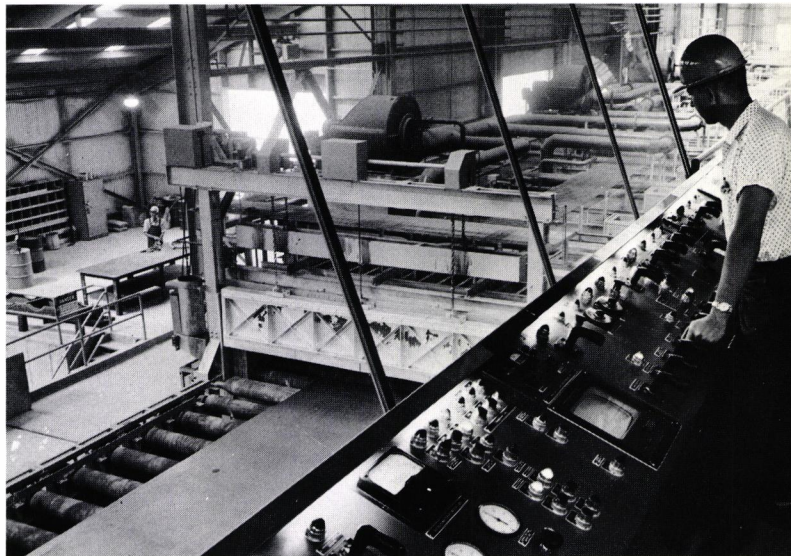
This is as it should be, and Sheffield people prefer it that way. But if the challenge comes, and the security of our nation is threatened, Sheffield is ready—as it has always been—to produce whatever is needed for the defense of freedom anywhere in the world.



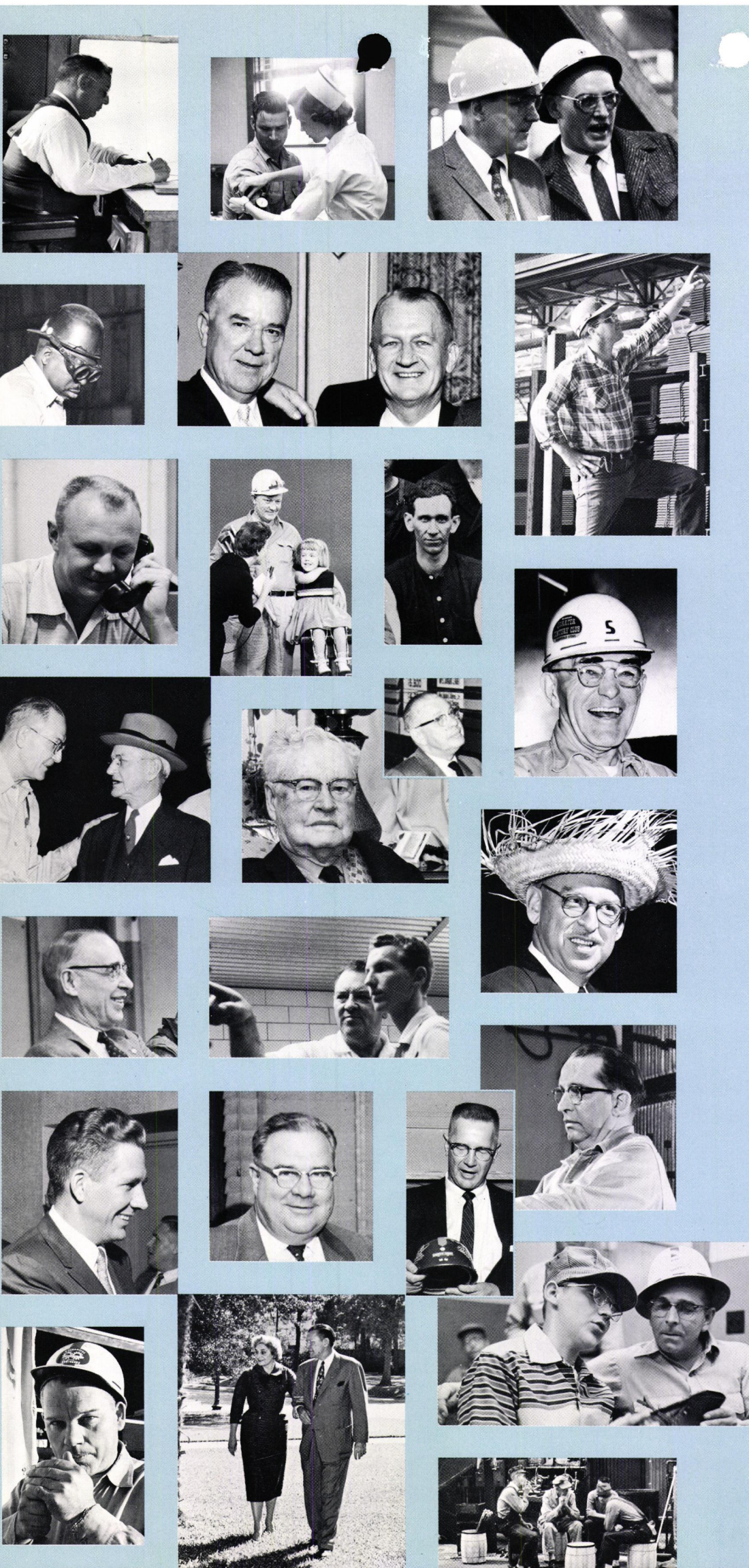
Steel rods, which are needed to maintain a healthy peacetime economy, are rolled on the Kansas City three strand No. 2 Rod Mill. When the mill went into operation in 1959, it was proclaimed as being, "The fastest and finest 10" rod mill in the world."



Almost 60 per cent of the tonnage produced at Kansas City is rolled on the 12-inch Mill. The products include: reinforcing bars, angles, flats and many other merchant and structural shapes.



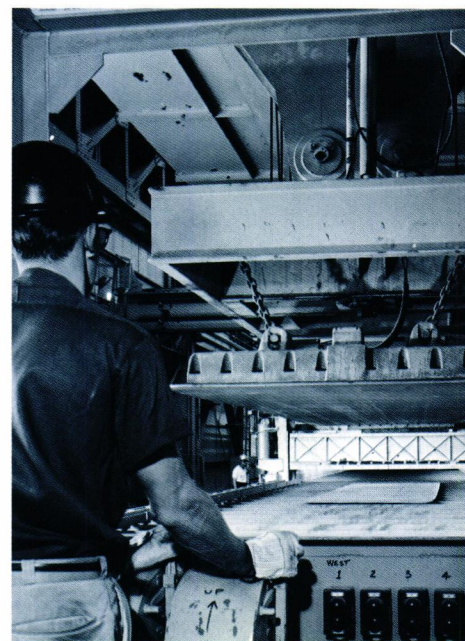
Robert H. Leonard controls the movement of a plate along the Houston Works heat treat line. This new facility has made it possible for the Sheffield Division to greatly increase its plate versatility. It can handle plates up to 144-inches wide.



Progress Through People

If there is a man yet living who worked at The Kansas City Bolt & Nut Company on the very first day it opened its doors for business, research has failed to produce him.

Few industries offer as much challenge, or pay, as the steel industry, and these two factors have attracted capable and intelligent men to Sheffield throughout its history. Here, Charging Gantry Operator Donald Wilde starts some plates toward the Houston Works heat treating furnace.



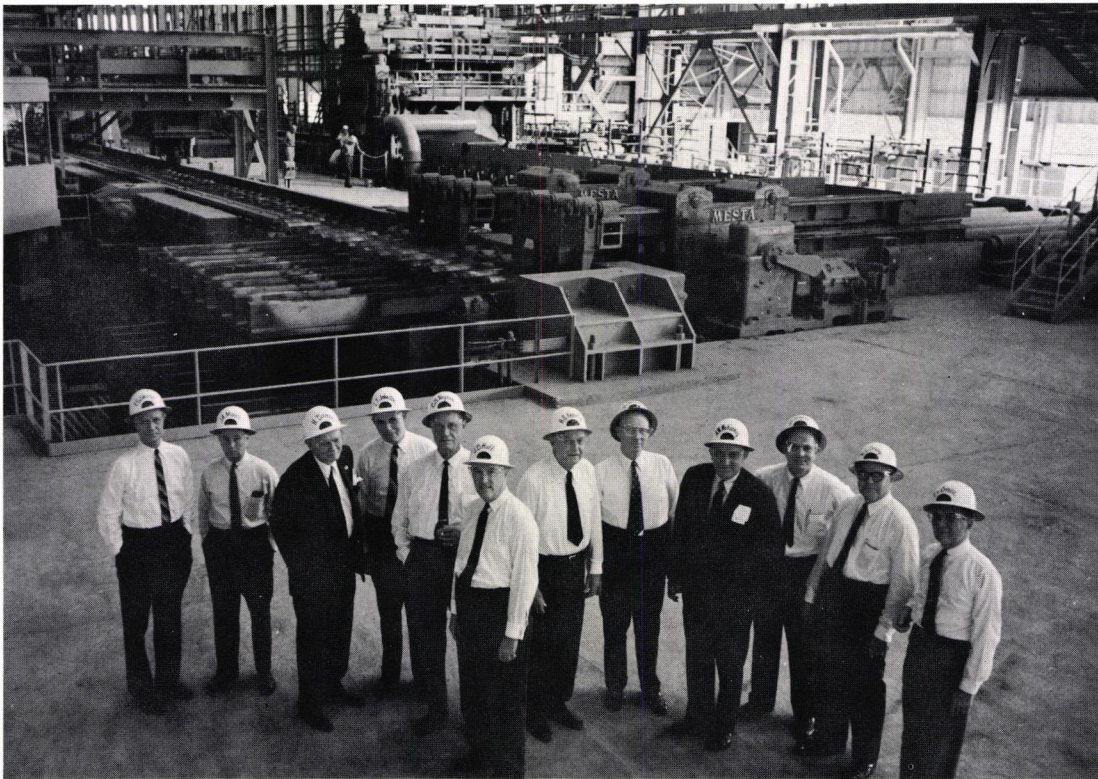


This storage tank is part of the world's largest oxygen plant supplying a single steel mill. It's being built at Armco's Ashland Works. Workers atop the tank's inner sphere are preparing to weld a 9 per cent nickel steel plate made at the Houston Works. This special steel was needed to contain oxygen, in liquid form, at -297 degrees F., which will be used to refine molten steel made by the LD Process.



Steel made by Sheffield people is used in freeways, buildings, homes and many other structures. Sheffield reinforcing and other merchant and structural bars form the backbone of the overpasses and underpasses of this freeway system leading into downtown Kansas City, Missouri.





One of the major highlights of Sheffield's recent history took place late in 1962 when the Armco Board of Directors visited the Houston Works for the official opening of the new 160" Combination Slab and Plate Mill. They are (left to right) T. S. Shore, J. A. Mayer, Herman Brown (deceased), Logan T. Johnston (present Armco President), C. S. Payson, J. B. Hall, K. C. Knowles, J. C. Donnell, II, A. W. McKinney (deceased), J. C. Denton, R. L. Gray (present Chairman of the Board) and F. V. Geier.

The Milestones Ahead



During recent years, the Sheffield Division has diverted a portion of its payroll, accounting and other record keeping functions to highly efficient electronic data processing equipment. Here, at the 1401 computer, are Joe H. Emery, William W. Krum and Paul L. Hacker.

The milestones ahead loom large and exciting to Sheffield Division people in this year of 1963. There is much to be done in the art of making steel . . . and if past experience can be used as a guide, Sheffield people will make many of the new discoveries and breakthroughs which must inevitably come.

Eager minds are already projecting plans which extend ten, even twenty, years ahead—and the quickening pace of technology in the fields of electronics, nuclear energy and solar energy may well determine and guide the destiny of steelmakers in the not too distant future. And though we perhaps do not realize it today, steel itself, like iron, may be replaced by something else.

And so we close the first seventy-five years of our company's history. It was started by the idea of one man—James H. Sternbergh—and has been nurtured and expanded through the courage and wisdom of many who followed. Just as you the readers have found some of the early pictures and processes amusing and hard to believe, those who follow us during the next seventy-five years will find our pictures and processes amusing and hard to believe. But this is the way history is made . . . and it has been a history of which every Sheffield man and woman who had a part in its making can be justly proud.

THE SHEFFIELD

LADLE

Published at Kansas City, Missouri, for the employees and families of the Sheffield Division, Armco Steel Corporation, by the Employee Communications Department; Supervisor of Employee Communications, R. O. Criger; Editor, Joe Curtis; and Staff Correspondents, Wesley Pyle, Houston and B. W. Proft, Sand Springs. Cover photograph by R. O. Criger.

More Precious Than Gold

Steel has sometimes been described as "more precious than gold." While this may not be precisely true, steel does form the backbone of the tremendous industrial complexes which have enabled our country to provide its citizens with the highest standard of living ever known to man.

The Sheffield Division of Armco Steel Corporation has played a vital role in this vigorous growth and prosperity. Steel products, used on farms, in homes and industries, and in the defense of freedom loving people throughout the world, are provided by Sheffield plants at Houston, Sand Springs and Kansas City.

Since October 31, 1920, when the Kansas City plant made its first heat of steel, the open hearth and electric furnaces at Sheffield plants have made more than 32 million tons of ingots. This steel was eventually made into products of all kinds for use in almost every corner of the globe.

The cover of this month's special 75th Anniversary issue of the *Ladle* shows a heat of rimmed steel being teemed at the Kansas City Open Hearth in 1958.

